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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/147,914	05/25/1999	AHARON MEIR EYAL	U-012130-1	2425

140 7590 10/04/2005

LADAS & PARRY
26 WEST 61ST STREET
NEW YORK, NY 10023

EXAMINER	
OH, TAYLOR V	
ART UNIT	**PAPER NUMBER**
1625	

DATE MAILED: 10/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/147,914	EYAL ET AL.	
	Examiner	Art Unit	
	Taylor Victor Oh	1625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 June 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *37-68* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *37-68* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Applicant's arguments with respect to claims 37-68 have been considered but are moot in view of the new ground(s) of rejection.

The Status of Claims

Claims 37-68 are pending.

Claims 37-68 are rejected.

DETAILED ACTION

Priority

1. It is noted that this application is a 371 of PCT/US97/17774 (10/02/1997) ,which has a foreign priority document (Israel 119389) filed on 10/09/1996.

Drawings

2. None .

Claim Rejections - 35 USC § 103

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 37-68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Voelskow et al (US 4,467,034) in view of Hammond (WO 95/32301) and Walkup et al (U 5,252,473).

Voelskow et al teaches a process for producing lactic acid from the fermentation of lactose and its purification by means of ion exchange in the following example (see from col. 5 ,line 22 to col. 6, line 3):

Continuous lactic acid preparation according to Example 4 was repeated, with the difference however that not $CaCO_3$ but sodium hydroxide was used for adjusting the pH. The advantage of this mode of operation is that a pH of 6.5 to 6.8 can be maintained, which inreases the fermenting rate of *Lactobacillus bulgaricus* DSM 2129. The sodium lactate solution obtained was led through ion exchanger columns which adsorbed the lactic acid. As soon as a column was loaded with lactic acid, it was eluted with hydrochloric acid. After regeneration with dilute sodium hydroxide solution, the column could be reused for lactic acid adsorption.

However, a cation and an anion exchanger can be either liquid or solid exchangers, the hydrolysis is conducted at a temperature higher than 80^0 C in a CO_2 containing atmosphere, the second product is used as a neutralizing agent in fermentation, and the recovery of the lactic acid is conducted by using the distillation.

Hammond teaches a method of preparing an organic acid or its salt by passing the acidic solution withdrawn from the bioreactor through a column of an anion exchanger regenerated with alkali metal hydroxide to recover an acid as an alkali salt; furthermore, the acid can be obtained from passing the alkali metal solution salt through a column of cation exchanger in hydrogen ion form (see page 1 ,lines 15-24).

Moreover, Walkup et al teaches a process of producing lactic acid and

esters of lactic acid in the following reactions.

In the first reaction, ammonium lactate produced by a fermentation process of carbohydrate materials (see col. 3 , lines 37-40) may be decomposed into NH_3 which can be used for controlling pH in the fermentation (see col. 2 ,lines 6-8) and lactic acid (see col. 6 ,line 5); in addition, purified lactic acid is produced from the CO_2 catalysis of ammonium lactate and alcohol solution in the presence of an acidic ion exchange resin at a temperature in the range of 100 to 150^0 C (see col. 14, lines 26-40); also, a simple distillation is recommended to purify the desired product (see col. 14 ,lines 53-57).

With respect to the use of the liquid or solid cation and anion exchangers, there is little difference between the use of either the solid or liquid ion exchangers since they are well-known in the art. Therefore, it would have been obvious to the skilled artisan in the art to be motivated to use the liquid ion exchanger as an alternative to the solid ion exchanger or vice-versa depending on the skilled artisan's intention.

Voelskow et al expressly teaches the process for producing lactic acid from the fermentation of lactose and its purification by means of ion exchange; similarly, Hammond does teach the method of preparing an organic acid or its salt by passing the acidic solution; also, Walkup et al teaches that the purified lactic acid is produced from the CO_2 catalysis of ammonium lactate and alcohol solution in the

presence of an acidic ion exchange resin along with the application of the simple distillation. All the prior art are commonly involved in the production of lactic acid. Therefore, if the skilled artisan in the art had desired to develop the purification of lactic acid involved in the hydrolysis in the presence of CO_2 by using the distillation, it would have been obvious to the skilled artisan in the art to be motivated to use the Hammond's anion exchanger followed by Voelskow's et al cation exchanger, along with Walkup's et al hydrolysis and distillation in order to increase the efficiency of the overall process. This is because the skilled artisan in the art would expect such combinations to be successful as taught in the prior art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Taylor Victor Oh whose telephone number is 571-272-0689. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cecilia Tsang can be reached on 571-272-0562. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*** 9/30/05